Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Reallocation of the 216-220 MHz,	)	WT Docket No. 02 - 8
1390-1395 MHz, 1427-1429 MHz,	)	RM-9267
1429-1432 MHz, 1432-1435 MHz,	)	RM-9692
1670-1675 MHz, and 2385-2390 MHz	)	RM-9797
Government Transfer Bands	)	RM-9854
	)	RM-9882

PETITION FOR PARTIAL RECONSIDERATION OF XM RADIO INC.

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Summary

In 1997, the Commission set an out-of-band emission limit for systems nearby the new satellite radio frequencies, in order to protect satellite radio consumers. In its recent order in this proceeding, however, the Commission abandoned that standard and left millions of future satellite radio consumers vulnerable to interference. The Commission's reasons for deviating from the established protection standard are wrong and without support in the record: (i) the frequency separation between the 2385-2390 MHz band and the satellite radio band does not make the out-of-band emissions from the 2385-2390 MHz band any less problematic when they appear in the satellite radio band; its only relevance is that the greater frequency separation should make it easier for manufacturers to meet the limit; (ii) terrestrial repeaters provide far too little coverage to be a solution to the problem of out-of-band emission interference to satellite radio consumers; and (iii) there is no evidence supporting the conclusion that the previously-established standard would significantly increase the cost or prevent the deployment of mobile operations in the 2385-2390 MHz band.

The Commission has similarly failed to justify the out-of-band emission limit it has adopted for the 2385-2390 MHz licensee. While the 43 + 10 log (p) emission limit adopted may be a "standard" out-of-band emission limit for various services in other frequency bands, it is inappropriate for a fixed and mobile service that operates in frequencies so close to the satellite radio band. And, while the Commission states that the level adopted reflects a "proper balance" between protecting adjacent-band operations and allowing for a viable service, there is no evidence in the decision that the Commission actually engaged in any balancing.

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PETITION FOR PARTIAL RECONSIDERATION

XM Radio Inc. ("XM Radio"), pursuant to Section 1.429 of the Commission Rules, hereby files this Petition for Partial Reconsideration of the *Report and Order* issued in the above-captioned proceeding in which the Commission has adopted an out-of-band emission limit for the eventual licensee in the 2385-2390 MHz service that will cause harmful interference to satellite radio providers in the 2320-2345 MHz band.

Background

In 1995, the Commission allocated spectrum in the S-band to the Satellite Digital Audio Radio Service ("SDARS" or "satellite radio"). XM Radio and Sirius Satellite Radio Inc. ("Sirius") were the winning bidders in the SDARS auction held in April 1997, together committing nearly $170 million to the U.S. Treasury.[1] XM Radio was awarded the license to provide satellite radio service in the 2332.5-2345 MHz band. As the Commission has repeatedly recognized, this new consumer-based mass media service promises enormous public interest

[1] American Mobile Radio Corporation, 13 FCC Rcd 8829 (Int'l Bur., 1997); Satellite CD Radio, 13 FCC Rcd 7971 (Int'l Bur., 1997).

benefits for the U.S. public.[2] Since their licensing, XM Radio and Sirius have made extraordinary progress in the development of their satellite radio systems. Both licensees have successfully launched their satellites, deployed in-band terrestrial repeaters in some markets to fill gaps in satellite coverage, and have initiated commercial service, providing high-quality, continuous, nationwide digital multichannel audio service.

As XM Radio has explained in this and other proceedings, satellite radio is unique among services the Commission regulates because it is the only service that possesses three characteristics – satellite, mobile, and mass media -- that make interference of greater potential and greater concern.[3] First, as a satellite service, satellite radio is necessarily more vulnerable to interference than terrestrially based services, but no more vulnerable than other mobile satellite service systems in existence today.[4] Reception of satellite radio signals depends on the transmission of a signal from a satellite thousands of miles away to a very small antenna operating in a mobile environment. While the SDARS satellites are state-of-the-art and among

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[2] *See, e.g.*, Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band, *Report and Order, Memorandum Opinion and Order*, 12 FCC Rcd 5754, ¶ 1 (1997) ("*SDARS Order*").

[3] *See* Comments of XM Radio, Inc., WT Docket 02-8 (March 4, 2002), at 3. XM Radio has also discussed the susceptibility of satellite radio to interference from out-of-band emissions in the following proceedings: Amendment of Part 18 of the Commission's Rules to Update Regulations for RF Lighting Devices, *Notice of Proposed Rulemaking*, 13 FCC Rcd 11307, ET Docket 98-42 (1998) ("RF Lighting Proceeding"); Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, *Notice of Proposed Rulemaking*, ET Docket 98-153 (May 11, 2000) ("UWB Proceeding"); Garmin International, Inc., *Notice of Proposed Rulemaking*, WT Docket No. 01-339 (Dec. 20, 2001) ("Family Radio"); Review of Part 15 and Other Parts of the Commission's Rules, *Notice of Proposed Rulemaking and Order*, ET Docket No. 01-278 (Oct. 15, 2001) ("Part 15 Review Proceeding").

[4] *See* Comments of XM Radio, Inc., WT Docket No. 02-8, at 3; *see also* Joint Petition for Partial Reconsideration of XM Radio and Sirius, ET Docket No. 98-153, at 2 (June 17, 2002); Comments of XM Radio, ET Docket No. 01-278, at 3 and Exhibit A (Feb. 12, 2002); Comments of Sirius, ET Docket No. 01-278, Exhibit A at 20-26 (Feb. 12, 2002); Comments of XM Radio, ET Docket No. 98-153, at 3 (Sept. 12, 2000).

the most powerful communications satellites ever manufactured, the downlink signal power available to the receiver is much lower than terrestrial-based communications systems, thereby requiring very sensitive satellite radio receivers.[5] Second, satellite radio is primarily a mobile service.[6] This eliminates the ability to enter into prior coordination agreements with sources of interference. Satellite radio receivers also use omnidirectional antennas that eliminate the ability to "point" an antenna away from a source of interference.[7] Third, as a mass media service, satellite radio providers must achieve 99.9% availability to satisfy consumer expectations.[8] For some services, such as cellular service, intermittent interference, some dropped calls, and other annoyances have become commonplace and generally accepted by consumers. For a mass media broadcast service such as satellite radio, however, consumers demand nothing less than near perfect service. Even intermittent interference is unacceptable for consumers who are paying for high-quality, digital audio entertainment.

In adopting out-of-band emission limits for Wireless Communications Service ("WCS") licensees, which operate in the 2305-2320 MHz and 2345-2360 MHz bands adjacent to satellite radio, the Commission accounted for these unique features of satellite radio. The Commission

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[5] *See* Comments of XM Radio Inc., ET Docket No. 01-278, at Exhibit A; *see also* Letter from David M. Leive, Counsel for Sirius, to Ms. Marlene H. Dortch, FCC, ET Docket No. 01-278 (April 19, 2002); Comments of Sirius Satellite Radio, ET Docket No. 01-278, Exhibit A at 20-26.

[6] *See* Comments of XM Radio, Inc., WT Docket No. 02-08, at 3; *see also* Joint Petition for Partial Reconsideration of XM Radio and Sirius, ET Docket No. 98-153, at 2, 9-10; Reply Comments of XM Radio, ET Docket No. 01-278, at 8 (March 12, 2002); Comments of XM Radio, ET Docket No. 01-278, at 3, 18; Comments of XM Radio, ET Docket No. 98-153, at 3.

[7] *See* Comments of XM Radio, Inc., WT Docket No. 02-08, at 3; *see also* Reply Comments of XM Radio, ET Docket No. 01-278, at 8; Comments of XM Radio, ET Docket No. 01-278, at 18; Comments of XM Radio, ET Docket No. 98-153, at 3.

[8] *See* Comments of XM Radio, Inc., WT Docket No. 02-08, at 3; *see also* Comments of XM Radio, ET Docket No. 01-278, at 3, 18; Comments of XM Radio, ET Docket No. 98-153, at 3.

concluded that "[i]n authorizing DARS, it was our desire to ensure a high quality radio service" and that if satellite radio "is subject to excessive interference, the service will not be successful and the American public will not benefit from the service."[9] The rules adopted require the power of any emission into the SDARS band from a mobile and most portable WCS transmitters to be attenuated below the transmitter power (p) by a factor of 110 + 10 log (p) dB. *See* 47 C.F.R. §27.53(a)(2). Assuming a 1 watt WCS mobile transmitter, this equates to a signal level of -80 dBm at the source (5.62 μV/m at 3 meters). The limit also requires the power of any emission into the SDARS band from a fixed WCS transmitter to be attenuated below the transmitter power (p) by a factor or 80 + 10 log (p) dB. *See* 47 C.F.R. §27.53(a)(1). Assuming a 1 watt WCS fixed transmitter, this equates to a signal level of -50 dBm at the source (180 μV/m at 3 meters). The Commission has also negotiated for similar limits in international coordination agreements with Canada and Mexico to apply to the services operating in the SDARS band in those countries.[10]

In January 2002, pursuant to the provisions of the Omnibus Budget Reconciliation Act of 1993[11] and the Balanced Budget Act of 1997,[12] the Commission reallocated the 2385-2390 MHz

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[9]Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), *Memorandum Opinion and Order*, 12 FCC Rcd 3977, ¶ 25, 27 (1997) ("*WCS Order*").

[10]The limit for new Canadian fixed systems into the SDARS band is -155 dBW/m^2/4kHz, which is equivalent to 5.5 μV/m at 3 meters. *See United States and Canada Agree on Conditions for Implementation of U.S. Satellite Digital Audio Radio Services (DARS) and Canadian Terrestrial Digital Radio Broadcast Services (T-DRB) along the U.S./Canada Border Area*, Report No. IN 98-50, *News Release* (Sept. 3, 1998) at 4 ("Canadian Coordination Agreement"). The limit adopted for terrestrial systems into the SDARS band at the U.S.-Mexican border is -154 dBW/m^2/4kHz, which is equivalent to 6.2 μV/m at 3 meters. *See Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Use of the 2310-2360 MHz Band* (July 24, 2000) at Appendix 1 ("Mexico Coordination Agreement").

[11]Pub. L.103-66, 107 Stat. 312 (1993).

[12]Pub. L.105-33, 111 Stat. 251 (1997).

band, along with other frequency bands, for both fixed and mobile commercial operations.[13] The 2385-2390 MHz band lies only 40 MHz from the upper edge of XM Radio's licensed frequency band and is currently used by both government and non-government incumbents for aeronautical telemetry operations. In February 2002, the Commission released a Notice of Proposed Rulemaking ("NPRM") asking for comments on service rules for this spectrum, including appropriate out-of-band emission limits, emissions masks, power limits, and antenna height limits to protect services operating in adjacent bands.[14] XM Radio filed Comments in response to the NPRM urging the Commission to apply to the new licensee in the 2385-2390 MHz band the same out-of-band emission limits into the SDARS band that the Commission applied to 2.3 GHz band WCS licensees in 1997.[15] No party opposed or otherwise commented on XM Radio's request.

On May 24, 2002, the Commission released the above-captioned *Order* adopting service and licensing rules for the reallocated spectrum.[16] The Commission has elected to award one

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[13]Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, *Report and Order and Memorandum Opinion and Order,* ET Docket No. 00-221, FCC 01-382 (rel. January 2, 2002).

[14] Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, *Notice of Proposed Rulemaking*, WT Docket No. 02-08, FCC 02-15 (rel. February 6, 2002).

[15]Comments of XM Radio, Inc., WT Docket No. 02-08 (March 4, 2002).

[16]Amendments to Parts 1, 2, 27 and 90 of the Commission's Rules to License Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, *Report and Order*, WT Docket No. 02-08, FCC 02-152 (rel. May 24, 2002) ("*Order*"). The *Order* was published in the Federal Register on June 20, 2002. *See* Licensee Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, 67 Fed. Reg. 41,847 (2002). Thus, Petitions for Reconsideration of the *Order* are due July 22, 2002. *See* 47 C.F.R. § 1.429.

nationwide license in the 2385-2390 MHz band for the provision of fixed and mobile services.[17] The Commission rejected XM Radio's request that the new licensee in the 2385-2390 MHz band be subject to the same out-of-band emission limits as existing WCS licensees in the 2.3 GHz band because (i) unlike existing 2.3 GHz band WCS licensees which operate in frequencies immediately adjacent to the SDARS band, the 2385-2390 MHz band is separated by 40 MHz from the upper edge of the SDARS band, thereby making potential for harmful interference to SDARS much less; (ii) the eventual 2385-2390 MHz licensee is "likely to be located in predominantly urban areas" where the SDARS licensees will have repeaters to boost their signal strength; and (iii) the limit proposed by XM Radio would have potential cost or service implications on the development of mobile operations in this band. *Order* at ¶ 132. Instead, the Commission required the new licensee in the 2385-2390 MHz band to limit emissions outside the 2385-2390 MHz band by a "standard" factor of 43+10 log (p). *Id.* at ¶ 131. Assuming a 1 watt mobile transmitter, this equates to a signal level of 12,590 μV/m at 3 meters or -13 dBm at the source.

Discussion

Under the Administrative Procedures Act ("APA"), a reviewing court must uphold a Commission Order unless it is found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). The Supreme Court has explained that an agency decision will be affirmed only if the agency "examines the relevant data and articulates a satisfactory explanation for its action including a rational connection between the

[17]While the auction of the 2385-2390 MHz license was originally scheduled for September 18, 2002, it has since been postponed. *See* Auction No. 46, Revised License Inventory and Auction Start Date, DA 02-1628 (July 15, 2002).

facts and the choices made."[18] The Supreme Court has further clarified that an agency's decision would be considered arbitrary and capricious if it "entirely failed to consider an important aspect of the problem [or] offered an explanation for its decision that runs counter to evidence before the Commission."[19] It is also well-established that when the Commission seeks to change an existing rule, policy, or precedent it must "supply a reasoned analysis indicating that prior policies are being deliberately changed and not casually ignored."[20]

I. THE COMMISSION HAS NOT OFFERED A SUFFICIENT JUSTIFICATION FOR FAILING TO APPLY TO THE 2385-2390 MHZ LICENSEE THE SAME OUT-OF-BAND EMISSION LIMITS THAT APPLY TO EXISTING 2.3 GHZ BAND WCS LICENSEES

The Commission has failed to justify its refusal to extend to the 2385-2390 MHz licensee the same out-of-band emission limits that it found in 1997 would be sufficient to avoid interference to satellite radio from fixed and mobile WCS operations in the 2.3 GHz band. The Commission offers three unavailing reasons for deviating from this precedent for a similar fixed and mobile service in the 2385-2390 MHz band. *Order* at ¶ 132. First, the Commission states that because the 2385-2390 MHz band is separated by 40 MHz from the upper edge of the SDARS band, whereas existing WCS licensees in the 2305-2320 MHz and 2345-2360 MHz

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[18] *See Motor Vehicle Manufacturers Association of the United States v. State Farm,* 463 U.S. 29, 43 (1983); *see also Sithe/Independence Power Partners, L.P. v. FERC*, 165 F.3d 944, 949-50, 952 (D.C. Cir. 1999) (agency must provide clear explanation of rationale and reveal the data and assumptions underlying its findings); *Schurz Communications v. FCC,* 982 F.2d 1043, 1050 (7th Cir. 1992) (vacating an FCC rule because key concepts were left unexplained and key evidence was overlooked); *Flagstaff Broadcasting Foundation v. FCC*, 979 F.2d 1566 (D.C. Cir. 1992) (the court will set aside an action by the Commission when it fails to provide a reasoned basis for its decision); *Bechtel v. FCC*, 957 F.2d 873, 881 (D.C. Cir. 1992) (Commission must address serious challenges); *see also Action for Children's Television v. FCC*, 821 F.2d 741, 746 (D.C. Cir. 1987).

[19] *See Motor Vehicle Manufacturers Association of the United States v. State Farm,* 463 U.S. at 43.

[20] *Greater Boston Television Corp. v. FCC*, 444 F2d 841, 852 (D.C. Cir. 1970), *cert. denied*, 403 US 923 (1971).

bands operate in frequencies immediately adjacent to the SDARS band, the potential for harmful interference to satellite radio from the 2385-2390 MHz licensee is much less. *Id.* The frequency separation between the SDARS band and the 2385-2390 MHz band, however, is of little relevance. The interference potential to satellite radio from operations of the existing WCS licensees and the 2385-2390 MHz licensee is the same. Both services operate sufficiently close in frequency to the SDARS band to create a concern regarding interference from out-of-band emissions. Both licensees can also provide a wide range of fixed and mobile services that can operate in close physical proximity to satellite radio receivers. The Commission has acknowledged that out-of-band emissions from devices that operate in frequency bands well over 40 MHz away from the SDARS band can present an interference concern.[21] For example, the Commission is currently reviewing its out-of-band emission limits for RF lights that operate in the 2400-2483.5 MHz ISM band, which is at least 55 MHz from the upper edge of the SDARS band, because of its concern that out-of-band emissions from these lights can interfere with satellite radio.[22] In that proceeding, the Commission has proposed to apply an out-of-band emission limit of 500 μV/m at 3 meters (equivalent to -41 dBm at the source) to RF lights.[23] While both XM Radio and Sirius have demonstrated that this limit is not sufficient to protect satellite radio operations,[24] the limit proposed in that proceeding is still 28 dB more stringent

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[21] *See* Amendment of Part 18 of the Commission's Rules to Update Regulations for RF Lighting Devices, *Notice of Proposed Rulemaking*, 13 FCC Rcd 11307 (1998) ("*RF Lighting NPRM*); Revision Of Part 15 Of The Commission's Rules Regarding Ultra-Wideband Transmission Systems, *First Report and Order*, FCC 02-48 (rel. April 22, 2002).

[22] *See RF Lighting NPRM* at ¶ 12 (1998) ("We are particularly concerned that this [out-of-band] energy could cause interference to other services operating near the 2450 MHz band, such as the Digital Audio Radio Service operating in the 2320-2345 MHz frequency band.").

[23] *Id.*

[24] *See, e.g.,* Comments of XM Radio (f/k/a American Mobile Radio Corporation), ET Docket 98-42 (July 8, 1998); Comments of Sirius (f/k/a Satellite CD Radio), ET Docket 98-42

than the limit adopted in the present proceeding even though RF lights operate in frequencies at least 10 MHz further from the SDARS band than the 2385-2390 MHz licensee. The only relevance of the 40 MHz of frequency separation between the SDARS band and the 2385-2390 MHz band is that this separation should enable the 2385-2390 MHz licensee to meet the existing WCS out-of-band emission limits into the SDARS band with little cost or difficulty.

Second, the Commission states that it is not necessary to adopt the existing WCS out-of-band emission limit because the eventual 2385-2390 MHz licensee is "likely to be located in predominantly urban areas" where the satellite radio licensees will have repeaters to boost their signal strength. *Order* at ¶ 132. There is no support in the record for the Commission's assumption that the facilities and devices operating in the 2385-2390 MHz band will "likely" be located "predominantly" in urban areas. Like WCS operations, 2385-2390 MHz devices and facilities can operate anywhere, including rural and suburban areas. There is no rule that restricts the 2385-2390 MHz licensee to operate only in urban areas. Even if the 2385-2390 MHz licensee did only deploy its facilities in urban areas, there are many urban areas where the satellite radio licensees do not operate repeaters. There is simply no basis for the Commission to assume that the satellite radio licensees will operate terrestrial repeaters wherever the 2385-2390 MHz licensee has deployed facilities. Finally, even in an urban area where a satellite radio licensee operates a repeater, there will be places in these areas where repeaters do not provide coverage or where the amplitude of the repeater signal will be close to the receiver threshold,

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(July 8, 1998; Comments of XM Radio (f/k/a American Mobile Radio Corporation), ET Docket 98-42 (August 7, 1998); Reply Comments of Sirius (f/k/a Satellite CD Radio), ET Docket 98-42 (July 8, 1998; Joint Supplemental Comments of XM Radio and Sirius, ET Docket 98-42 (May 4, 2001); *Ex Parte* of XM Radio and Sirius, ET Docket No. 98-42 (June 21, 2001); *Ex Parte* of XM Radio and Sirius, ET Docket No. 98-42 (July 24, 2001); *Ex Parte* of XM Radio and Sirius, ET Docket No. 98-42 (January 9, 2002); *Ex Parte* of XM Radio and Sirius, ET Docket No. 98-42 (April 3, 2002); *Ex Parte* of XM Radio and Sirius, ET Docket No. 98-42 (April 8, 2002).

meaning that a 2385-2390 MHz device or facility could cause interference to satellite radio reception. Terrestrial repeaters are simply not a solution to the problem of out-of-band emission interference to satellite radio and it is improper for the Commission to rely on XM Radio's repeaters to support the out-of-band emission levels adopted.

Third, the Commission concludes that applying the existing WCS out-of-band emission limit to the 2385-2390 MHz licensee would have potential cost or service implications on the development of mobile operations in the 2385-2390 MHz band. *Order* at ¶ 132. There is not one shred of evidence in the record to support this conclusion. Not one party objected to extending the existing WCS out-of-band emission limit to the 2385-2390 MHz licensee. XM Radio believes the 2385-2390 MHz licensee can meet the existing WCS out-of-band emission limit into the SDARS band with little cost and no impact on service, especially given the 40 MHz of frequency separation between the two services. There is no evidence in the record supporting a contrary conclusion.

II. THE OUT-OF-BAND EMISSION LIMIT ADOPTED FOR THE 2385-2390 MHZ LICENSEE INTO THE SDARS BAND IS ARBITRARY AND CAPRICIOUS, WITHOUT SUPPORT IN THE RECORD, AND WILL CAUSE HARMFUL INTERFERENCE TO SDARS

In addition to failing to justify its deviation from the WCS precedent, the Commission has failed to provide adequate justification for the emission limit of 43 + 10 log (p) it has adopted. The D.C. Circuit has recently reminded the Commission that it violates the APA if it "omit[s] an explanation" or "fail[s] to justify adequately its choice of an interference threshold," because "[c]onclusory explanations for matters involving a central factual dispute where there is considerable evidence in conflict do not suffice to meet the deferential standards of our review."[25] In adopting its out-of-band emission limit of 43 + 10 log (p) for the 2385-2390 MHz

[25] *AT&T Wireless Services, Inc. v. FCC*, 270 F.3d 959, 968 (D.C. Cir. 2001).

licensee, the Commission has failed to heed these warnings. The only justification the Commission offers is that 43 + 10 log (p) is a "standard factor" and that it "strikes the proper balance between protecting adjacent-band operations and allowing for a viable service in the 2385-2390 MHz band." *Order* at ¶ 131.

While 43+10 log (p) may be a "standard" out-of-band emission limit for various services in other frequency bands,[26] it is an inappropriate standard for a terrestrial service that operates close in frequency to the satellite radio band. As discussed above and in XM Radio's Comments, satellite radio being a satellite, mobile, and mass media service is necessarily more sensitive to interference from out-of-band emissions than other services.[27] The Commission accounted for this in adopting the out-of-band emission limits applicable to existing WCS licensees in the 2.3 GHz band. *See* 47 C.F.R. § 27.53(a). The emission limit adopted for the 2385-2390 MHz licensee, however, is 67 dB higher than the out-of-band emission limit for mobile WCS devices[28] and 37 dB higher than the limit for fixed WCS facilities into the SDARS

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[26]*See, e.g.*, 47 C.F.R. §§ 22.359, 22.917, 24.238. It appears that even 43 + 10 log (p) is not as "standard" as the Commission would believe. The Commission has failed to consider that existing WCS licensees in 2305-2320 MHz and 2345-2360 MHz bands are required to meet an emission limit of 70 + 10 log (p) (which is equivalent to approximately 500 μV/m at 3 meters) on all frequencies above 2370 MHz (which includes the 2385-2390 MHz licensee), whereas the new 2385-2390 MHz licensee is required to meet the far less stringent emission limit of 43 + 10 log (p) (which is equivalent to 12,590 μV/m at 3 meters) into the WCS bands. The Commission does not address this disparity.

[27]*See* Comments of XM Radio, WT Docket No. 02-8, at 3; *see also supra* notes 3-8 and accompanying text.

[28]The Commission recently acknowledged the difficulties in remedying interference to satellite services from mobile devices. *See* Review of Part 15 and other Parts of the Commission's Rules, *First Report and Order*, ET Docket 01-278 (rel. July 19, 2002), at ¶ 10 ("identifying each individual source of interference from radar detectors is not practical for a satellite operator because these devices are mobile and therefore interfere intermittently").

band. *Cf.* 47 C.F.R. §27.53(i) (as adopted) with 47 C.F.R. § 27.53(a)(1)-(2) (2001).[29] Blindly applying an out-of-band emission level that may be "standard" for other services without considering the interference potential to a necessarily sensitive, adjacent-band satellite licensee does not satisfy the requirements of the APA.

While the Commission states that the emission level adopted is a "proper balance" between protecting adjacent-band operations and allowing for a viable service, the Commission never engaged in any "balancing." The Commission never addressed the effects of the emission limit adopted on satellite radio operations. In addition, there is no evidence in the record to support the Commission's conclusion that a more stringent out-of-band emission limit than 43 + 10 log (p) will make service in the 2385-2390 MHz band unviable. Not one commenter advocated such a standard for the 2385-2390 MHz licensee and not one commenter objected to extending the existing WCS out-of-band emission limits to the 2385-2390 MHz licensee.

[29]The emission limit adopted is also inconsistent with the limits negotiated in international coordination agreements to protect satellite radio. For example, the limit negotiated for new Canadian fixed systems into the SDARS band is -155 dBW/m^2/4kHz, which is equivalent to 5.5 μV/m at 3 meters (Canadian Coordination Agreement at 4) and the limit adopted for terrestrial systems at the U.S.-Mexican border is -154 dBW/m^2/4KkHz, which is equivalent to 6.2 μV/m at 3 meters (*see* Mexican Coordination Agreement at Appendix 1).

Conclusion

XM Radio urges the Commission to reconsider its *Order* adopted in the above-captioned proceeding and apply to the new licensee in the 2385-2390 MHz band the same out-of-band emission limits to protect satellite radio that the Commission has adopted for existing 2.3 GHz band WCS licensees.

Respectfully submitted,

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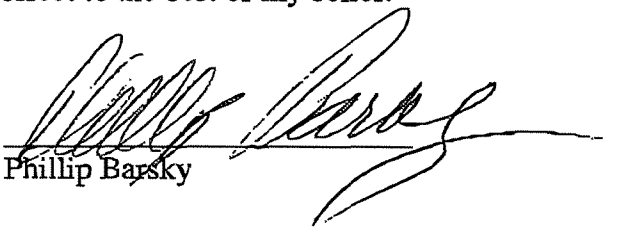
Technical Certification

I, Phillip Barsky, System Engineering Consultant -- Spectrum Management/Regulatory for XM Radio Inc., certify under penalty of perjury that:

I am the technically qualified person responsible for the preparation of the technical information contained in the above "Petition for Reconsideration of XM Radio Inc." The information contained in this document is true and correct to the best of my belief.



Phillip Barsky

Dated: July 22, 2002